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PCT/DE2003/003385

PATENT COOPERATION TREATY



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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Translation

| | | |
|---|--|---|
| Applicant's or agent's file reference 2002P17862WO | FOR FURTHER ACTION See Form PCT/IPEA/416 | |
| International application No. PCT/DE2003/003385 | International filing date (day/month/year) 13 October 2003 (13.10.2003) | Priority date (day/month/year) 07 November 2002 (07.11.2002) |
| International Patent Classification (IPC) or national classification and IPC H04B 10/158 | | |
| Applicant SIEMENS AKTIENGESELLSCHAFT | | |

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|--|--|
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>2</u> sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | |
| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p> | |

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|--|--|
| Date of submission of the demand 02 April 2004 (02.04.2004) | Date of completion of this report 04 February 2005 (04.02.2005) |
| Name and mailing address of the IPEA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/DE2003/003385

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ The international application as originally filed/furnished
- ☒ the description:
- pages _____ 1-10 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ 1-7 _____, as originally filed/furnished
- pages* _____, as amended (together with any statement) under Article 19
- pages* 12-13 _____ received by this Authority on 08 December 2004 (08.12.2004)
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages _____ 1/3-3/3 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/DE 03/03385

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|-----|-----|
| Novelty (N) | Claims | 1-6 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 1-6 | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | 1-6 | YES |
| | Claims | | NO |

2. Citations and explanations

1. The present report concerns the claims 1-6 submitted with the letter of reply of 8 December 2004.

Reference is made to the following documents:

D1: WO-A-00/44074

D2: US-A-5 742 418

D3: US-A-5 027 435.

2. Document D1 is considered to be the closest prior art for the subject matter of the newly filed claim 1. For the technical features disclosed by D1, reference should be made to the written report of 31 August 2004.

The subject matter of the claim filed with the letter of 8 December 2004 differs from that prior art in that it is not clear from D1 whether and how the light frequency of the received angle-modified optical signal is fed into the optical resonator. In addition, the determination of the phase of the received optical signal is known from one embodiment in D1 (see figure 3A), while the output of the light from the resonator by means of an optical output device connected upstream thereof is described in another embodiment (see figure 5).

The problem to be solved by person skilled in the art of optical data transfer would therefore appear to be that of finding an alternative way of extracting the phase information from an angle-modified optical signal.

Since the above-mentioned embodiments in D1 (figures 3A and 5) are basically different and there is no hint in D1 that some features of the first embodiment can be modified with those of the second embodiment, the receiver defined by the subject matter of the newly filed claim 1 can be considered inventive.

For the technical features disclosed by D2 and D3, reference should likewise be made to the written report of 8 December 2004.

- 2.1 None of the three documents D1 to D3 discloses the features described by the subject matter of claim 1, nor would any conceivable combination of these documents disclose the features described by claim 1.
- 2.2 Consequently, the subject matter of claim 1 is considered to be novel and inventive within the meaning of **PCT Article 33(1) to (3)**.
- 2.3 Since the newly filed claims 2-6 are dependent on the newly filed claim 1, they likewise comply with the requirements of novelty and inventive step within the meaning of **PCT Article 33(1) to (3)**.